

Open your research results to the community

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In previous lessons ...



DOI: Digital Object Identifier

A DOI is a globally unique and persistent string (e.g. 10.6084/m9.figshare.7509368.v1) that identifies your work **permanently**. It is a key element of any data repository that provides findability.

- A more straightforward way to track research outputs
- Gives certainty to scientific work
- DOI's versioning system tracks changes to work overtime
- Can be assigned to any document
- Enables proper indexation and citation of research outputs

Copied from here:

<https://www.teamscopeapp.com/blog/6-repositories-to-share-your-research-data>

Examples of repositories

General purpose: [Zenodo.org](https://zenodo.org), [Open Science Framework](https://openframeworks.org)

Institution specific: [DIGITAL.CSIC](https://digital.csic.es)

Research field specific: [NCBI](https://ncbi.nlm.nih.gov) (biomedical and genomic information), [VizieR](https://vizier.cfa.harvard.edu) (astronomy catalogs)

Region specific: [EUDAT](https://eudat.eu) in Europe, [United Nations Data](https://data.un.org)

For every case there are one or multiple solutions.
Find the most appropriate for you.

List of registries of research software:

<https://github.com/NLeSC/awesome-research-software-registries>

Zenodo & zenodo sandbox

<https://zenodo.org>

<https://sandbox.zenodo.org>

We will see a demo of how to

- Upload a presentation/article
- Edit metadata
- Link a GitHub repository and obtain a DOI
- Add a badge in the Github repository

The screenshot displays the Zenodo website interface. At the top is a blue header with the Zenodo logo, a search bar, and links for 'Upload' and 'Communities'. On the right of the header are 'Log in' and 'Sign up' buttons. Below the header, the 'Featured communities' section highlights the 'National COVID Cohort Collaborative (N3C)', providing a brief description and a 'New upload' button. The 'Recent uploads' section lists three items: 'BIP4COVID19: Impact metrics and indicators for coronavirus related publications', 'Trixi.jl', and 'immunomind/immunarch: Immunarch 0.6.8', each with a 'View' button. On the right side, there are two informational boxes: 'Need help?' with a 'Contact us' button and a list of services, and 'Why use Zenodo?' with bullet points explaining the benefits of the platform.

Featured communities

National COVID Cohort Collaborative (N3C)

The National COVID Cohort Collaborative (N3C) is a complementary and synergistic partnership among the Clinical and Translational Science Awards (CTSA) Program hubs, the National Center for Data to Health (CD2H), distributed clinical data networks (PCORnet, OHDSI, ACT/2b2, TriNetX), and other...

Curated by: CD2H

Recent uploads

BIP4COVID19: Impact metrics and indicators for coronavirus related publications

This dataset contains impact metrics and indicators for a set of publications that are related to the COVID-19 infectious disease and the coronavirus that causes it. It is based on: The COVID-19 dataset released by the team of Semantic Scholar1 and The curated data provided by the LitCovid hub2....

Uploaded on May 10, 2022

97 more version(s) exist for this record

Trixi.jl

Adaptive high-order numerical simulations of hyperbolic PDEs in Julia

Uploaded on May 9, 2022

104 more version(s) exist for this record

immunomind/immunarch: Immunarch 0.6.8

Aleksandr Popov; ivan-immunomind; MVolobueva; Vadim I. Nazarov; immunarch.bot; Eugene Rumynskiy;

Need help?

Contact us

Zenodo prioritizes all requested related to the COVID-19 outbreak.

We can help with:

- Uploading your research data, software, preprints, etc.
- One-on-one with Zenodo supporters.
- Quota increases beyond our default policy.
- Scripts for automated uploading of larger datasets.

Why use Zenodo?

- **Safe** – your research is stored safely for the future in CERN's Data Centre for as long as CERN exists.
- **Trusted** – built and operated by CERN and OpenAIRE to ensure that everyone can join in Open Science.
- **Citeable** – every upload is assigned a Digital Object Identifier (DOI), to make them citable and trackable.
- **No waiting time** – Uploads are made

DIGITAL.CSIC

<https://digital.csic.es>

DC Producción CSIC - Pasarela Estadísticas Contacto

Buscar en DSpace

DIGITAL.CSIC

Q

Servicios -

English español

 **DIGITAL.CSIC**
CIENCIA ABIERTA

Colección Especial COVID-19

Bienvenidos a **DIGITAL.CSIC**, el repositorio institucional del Consejo Superior de Investigaciones Científicas.
DIGITAL.CSIC organiza, preserva y difunde en acceso abierto los resultados de investigación del CSIC.
Memorias DIGITAL.CSIC
MONITOR Mandato OA CSIC
FAQs Mandato CSIC

 Comparte tu historia de Acceso Abierto

 Envíanos tus trabajos



Histórico de imágenes y videos

Tu investigación en imágenes

Noticias destacadas

 **HORIZONTE EUROPA, prácticas de Ciencia Abierta y servicios de DIGITAL.CSIC** [25/04/2022]
La presentación del webinar **Horizonte Europa, prácticas de Ciencia Abierta y servicios de DIGITAL.CSIC** ya está disponible. La sesión repasó las prácticas obligatorias y recomendadas de Ciencia Abierta dispuestas en el nuevo marco de financiación Horizonte Europa así como los servicios ofrecidos por DIGITAL.CSIC para ayudar en su cumplimiento.

 **Material formativo sobre el Mandato CSIC de acceso abierto** [06/04/2022]
La Oficina Técnica de DIGITAL.CSIC ha impartido el curso del Gabinete de Formación "Servicios, cumplimiento y monitorización del mandato institucional de acceso abierto (2022)" para aclarar **preguntas frecuentes sobre esta disposición institucional y explicar la estrategia de cumplimiento y monitorización de cargas de producción científica CSIC afectada en el repositorio**. El curso también repasó novedades en la nueva versión de DIGITAL.CSIC y Pasarela.

 **Inauguramos el Portal Pioneras CSIC** [08/03/2022]
Coincidiendo con las celebraciones del 8 de marzo, inauguramos el **Portal Pioneras CSIC** que destaca las contribuciones en múltiples disciplinas de las primeras generaciones de investigadoras CSIC y dando acceso a sus trabajos en DIGITAL.CSIC. Empezamos con 8 semblanzas e iremos añadiendo muchas más, haciéndonos eco del Homenaje que les rindió el CSIC en 2019 y con la colaboración especial de la Comisión Mujeres y Ciencia del CSIC.

Noticias anteriores

RSS

DIGITAL.CSIC

<http://hdl.handle.net/10261/267710>

¿Quién me puede ayudar con estos temas?

• CENTROS/INSTITUTOS CSIC CON BIBLIOTECA

¡Tu biblioteca!

Oficina Técnica de DIGITAL.CSIC
[DIGITAL.CSIC: Oficina técnica](#)

Equipo URICI del Programa para publicar en acceso abierto
ayudasopenaccess@bib.csic.es

• CENTROS/INSTITUTOS CSIC SIN BIBLIOTECA

Programa Plan100% Digital de servicios bibliotecarios “en remoto”: [centros/institutos CSIC adheridos](#)

Oficina Técnica de DIGITAL.CSIC
[DIGITAL.CSIC: Oficina técnica](#)

Equipo URICI del Programa para publicar en acceso abierto
ayudasopenaccess@bib.csic.es

HORIZONTE EUROPA, prácticas de Ciencia Abierta y servicios de DIGITAL.CSIC

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22 de abril 2022, online (Conecta)

DIGITAL.CSIC



<http://hdl.handle.net/10261/267710>

DIGITAL.CSIC

<https://digital.csic.es/dc/recursos.jsp>

¿Dónde encontrar información sobre...?

[DIGITAL.CSIC: Buenas Prácticas, Recursos y Ayuda](#)

-Servicio de Archivo Delegado: carga de producción científica CSIC por personal bibliotecario

-Gestión de acceso abierto

-Funcionamiento, políticas y servicios de DIGITAL.CSIC

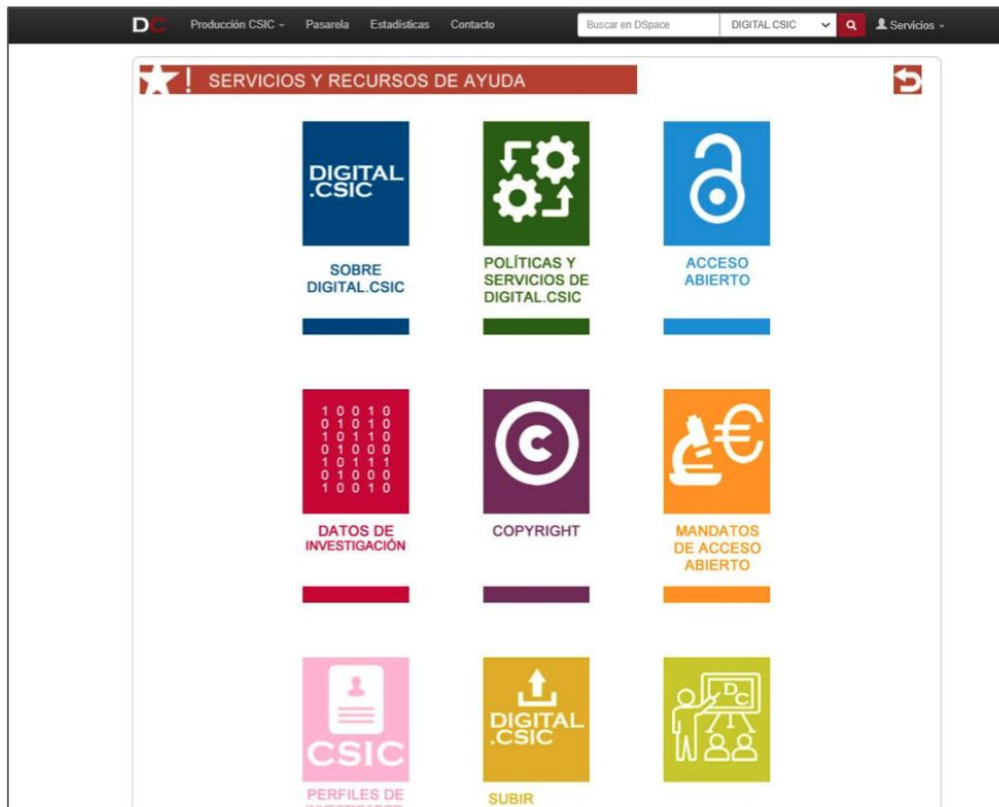
-Mandatos de acceso abierto que afectan a la comunidad CSIC

-Gestión de datos de investigación (incluidos planes de gestión de datos)

-Gestión de copyright y Ciencia abierta

-Perfiles de investigadores, Grupos y proyectos CSIC

-Recursos de interés, buenas prácticas y material formativo de la Oficina Técnica de DIGITAL.CSIC



DIGITAL.CSIC

DIGITAL.CSIC como repositorio de datos

Informa a la Oficina Técnica de DIGITAL.CSIC tan pronto como sea posible

Capacidad de alojar ficheros grandes (varios GB por fichero) pero DIGITAL.CSIC no es una infraestructura de big data

Ten preparada información preliminar sobre: formato, volumen y estructura de datos, expectativas en su gestión

TU colaboración para describir los datos es fundamental si quieres que sean FAIR

Generación de DOIs automáticamente (datasets, software, preprints) y a demanda

DIGITAL.CSIC no impone ningún tipo de licencia de uso pero el mandato CSIC recomienda las licencias Creative Commons/Open Data Commons

Document your project

The obvious way is to write a good README file. Find some ideas interactively here: <https://readme.so/editor>

There are other online services that converts documentation into full web pages:

- You can also use [Github pages](#). It is a Github service that produces web pages directly from repositories. Can be used for [documentation](#), [slides](#), [cv](#), etc
- Another free platform is readthedocs.org

Read the docs

<https://readthedocs.org>

An example:

Code in the repo as markdown files:

<https://github.com/Hi-FRIENDS-SDC2/hi-friends/tree/master/docs>

Rendered as a web page in readthedocs:

<https://hi-friends-sdc2.readthedocs.io/en/latest/index.html>

(always synchronized with every change)



Read the Docs

Crear, alojar y explorar documentación.

Registrarse

o [Acceder](#)

Technical documentation lives here

Read the Docs simplifies software documentation by automating building, versioning, and hosting of your docs for you.

Free docs hosting for open source

We will host your documentation for free, forever. There are no tricks. We help over 100,000 open source projects share their docs, including a custom domain and theme.

Always up to date

Whenever you push code to your favorite version control service, whether that is GitHub, BitBucket, or GitLab, we will automatically build your docs so your code and documentation are never out of sync.

Downloadable formats

We build and host your docs for the web, but they are also viewable as PDFs, as single page HTML, and for eReaders. No additional configuration is required.

Multiple versions

We can host and build multiple versions of your docs so having a 1.0 version of your docs and a 2.0 version of your docs is as easy as having a separate branch or tag in your version control system.

[Read the Tutorial](#)

Reproducibility checklists

An example of a checklist to obtain a bronze/silver/gold reproducibility score:

https://drive.google.com/file/d/1B2mZ_SYwktvXY-Rbdf0OgIIPuyHBs2UW/view

It is a list of suggested criteria to follow.

Reproducibility is not “all or nothing”. It is a process, make your research as reproducible as you can!

Show <https://fair-software.eu/>

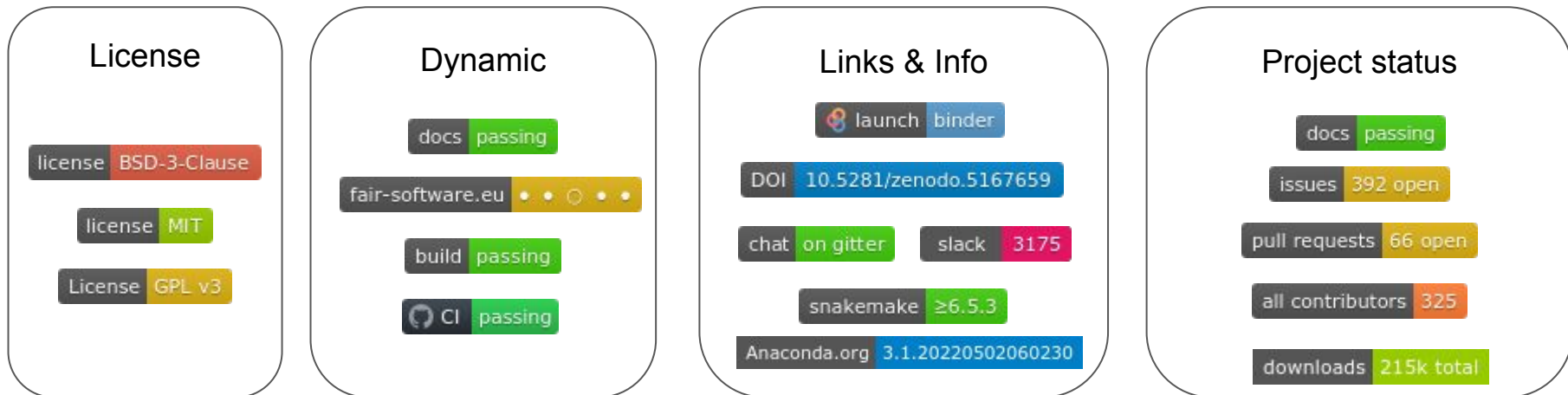
	<p>Reproducibility of the solution</p> <p>Can the software pipeline be re-run easily to produce the same results? Is it:</p> <ul style="list-style-type: none">Well-documented Research software documentation best practiceEasy to install Top tips for packaging softwareEasy to use Top tips for documentation	
Well-documented	High-level description of what/who the software is for is available	
	High-level description of what the software does is available	
	High-level description of how the software works is available	
	Documentation consists of clear, step-by-step instructions	
	Documentation gives examples of what the user can see at each step e.g. screenshots or command-line excerpt	
	Documentation uses monospace fonts for command-line inputs and outputs, source code fragments, function names, class names etc	
Easy to install	Documentation is held under version control alongside the code	
	Full instructions provided for building and installing any software	
	All dependencies are listed, along with web addresses, suitable versions, licences and whether they are mandatory or optional	
	All dependencies are available	
	Tests are provided to verify that the installation has succeeded	
	A containerised package is available, containing the code together with all of the related configuration files, libraries, and dependencies required. Using e.g. <i>Docker/Singularity</i>	
Easy to use	A getting started guide is provided outlining a basic example of using the software e.g. a <i>README</i> file	
	Instructions are provided for many basic use cases	
	Reference guides are provided for all command-line, GUI and configuration options	
	<p>Reusability of the pipeline</p> <p>Can the code be reused easily by other people to develop new projects? Does it:</p> <ul style="list-style-type: none">Have an open licence Choosing an open source licenceHave easily accessible source code Choosing a repository for your projectAdhere to coding standards Writing readable source codeUtilise tests Testing your software	
Open licence	Software has an open source licence e.g. <i>GNU General Public License (GPL)</i> , <i>BSD 3-Clause</i>	
	Licence is stated in source code repository	
Accessible code	Each source code file has a licence header	
	Access to source code repository is available online	
Code standards	Repository is hosted externally in a sustainable third-party repository e.g. <i>SourceForge</i> , <i>LaunchPad</i> , <i>GitHub</i> : Introduction to GitHub	
	Documentation is provided for developers	
Testing	Source code is laid out and indented well	
	Source code is commented	
	There is no commented out code	
	Source code is structured into modules or packages	
	Source code uses sensible class, package and variable names	
	Source code structure relates clearly to the architecture or design	
Testing	Source code has unit tests	
	Software recommends tools to check conformance to coding standards e.g. A <i>“linter”</i> such as <i>PyLint</i> for <i>Python</i>	

Make it easy for other people to navigate your project

Badges or shields:

Informative icons to **advertise the quality of a project** and to easily point to resources. They usually include a link. They can be updated automatically.

Examples and generate your own: <https://shields.io/> or <https://badgen.net/>



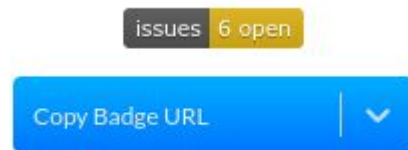
Examples: create a badge

1. Github Open issues:

Navigate to <https://shields.io/> > Issue Tracking > [GitHub issues](#)

Enter user: **spsrc**, repo: **reproducibility-course**

You will see a preview and the URL to copy to the README



2. myBinder link

Navigate to <https://mybinder.org/>

Enter repo link: <https://github.com/spsrc/reproducibility-course>

Expand the arrow to copy the link



The end

Making a reproducible analysis is usually not enough

- You can make it findable, accessible and citable by putting it in a data/software repository
- You can make it understandable by writing documentation: README and readthedocs, github pages, etc
- You can make it interesting and easy to navigate: badges are a friendly way to show relevant info quickly.